

THE LEVEL AND DISTRIBUTION OF POLYCYCLIC AROMATIC HYDROCARBONS IN SEDIMENTS OF THE HUAIHE RIVER AND THEIR ECOLOGICAL RISK

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Objective Describing the levels and distributions of 16 PAHs in the sediments of the Huaihe River.

Method Searching and collecting articles on the PAHs in the sediments of the Huaihe River from year 1980 to 2010, integrating and analyzing the levels and distributions of 16 kinds PAHs in the 35 reported sections of the sediments in Huaihe River basin and evaluating the potential ecological risk.

Result (1) The average content of the PAHs in the sediments of the Huaihe River was 143.1ng/g, which was lower than those in other rivers basin in China, such as Yangtze River in Nanjing, Yellow River and Pearl River. (2) The level of the PAHs in the sediments showed great surge along the stem of the Huaihe River. The level of PAHs was 1293.0ng/g at the Fengtai Bridge (Huainan, 2007), 1278.0ng/g at the Luo River Power Plant (Huainan, 2007) and 1007.7ng/g at the Pingwei (Huainan, 2006), while 5.4ng/g at Han Ying (Bengbu, 2007) and 6.7ng/g at the Pier One (Bengbu, 2007). (3) Based on Long's method of Effort Range Low and Medium (ERL/ERM) calculated potential ecological risk of PAHs in the sediments was less than 10%. The level of Dibenzo (a,h) anthracene was 156.5ng/g and its ecological risk was between 10% and 50%. (4) Benzo (b/k) fluoranthene, indeno (1,2,3-cd) pyrene and benzo (ghi) perylene and so on were detected in 31 of 35 sections, which imply there were the biological toxic side effects in sediments of huaihe River.

Conclusion Compared with other river basin, the contents of the PAHs in the sediments of the Huaihe River were lower in the overall situation and the potential ecological risk was on the relative low level. However, attention should be paid to the detected PAHs with no minimum safe value in some sections.